receiving a first control packet in a first node of said plurality of nodes, said first node comprising a plurality of control packet buffers, each of said plurality of control packet buffers assigned to a different one of a plurality of virtual channels;
determining a first virtual channel of said plurality of virtual channels to which said first control packet belongs;
storing said first control packet in a first control packet buffer of said plurality of control packet buffers, said first control packet buffer assigned to said first virtual channel;
receiving a first data packet specified by said first control packet; and
storing said first data packet in a first data buffer of a plurality of data buffers within said first node, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet.

These features are not taught or suggested in Naven.

The present Office Action appears to allege that the above highlighted features are taught in Naven at col. 4, lines 29-54 (see Office Action, page 3, first paragraph). Applicants respectfully disagree. In this section, Naven discusses control information and data items (the payload portions of ATM cells). Naven teaches "the data storage means preferably store, for each preselected virtual channel, control information *for use in storing the received data items* in the linked list for the channel concerned and/or for use *in retrieving those stored data items from the linked list* for transfer to the further apparatus. The channel [sic] information may include, for example, a write pointer, indicating the location in the memory means of the last data block in the linked list in which the data of a received ATM cell was stored, and a read pointer indicating the location in the memory means of the next data block in the linked list that is to be transferred to the further apparatus" (Naven, col. 4, lines 17-28). Thus, Naven's control information is generated by the apparatus for storing and retrieving data items received by the apparatus.

Naven goes on to teach a "channel map having entries corresponding respectively to the available virtual channels of the group. Each of the entries identifies one of a

plurality of control information storage portions that is associated individually with the virtual channel concerned" (Naven, col. 4, lines 33-37). Thus, the control information storage portions store the control information which, as highlighted above, is control information generated locally by the apparatus for controlling the storage of received data items.

Naven appears to describe his control information in more detail in col. 6-col. 7 and Fig. 3. Specifically, Naven teaches that "in order to control the output channels, the terminal controller 4 has, for each channel, a so-called 'descriptor' which contains, inter alia, information needed to store data in the linked list in the first stage of the above-mentioned two stage data transfer operation and to retrieve the stored data from the linked list in the second stage" (Naven, col. 6, lines 61-66) and that "these descriptors are themselves stored in the local memory 5" (Naven, col. 7, lines 1-2). In col. 7, lines 7-30, Naven describes fields in the descriptor, including: (i) a Write Frame Start, Write Last Cell, Write Cell Count, Write Byte Count, and Write Status fields for adding a newly-received cell payload to the linked list; and (ii) a Read First Cell, Read Frame End, Read Cell Count, Read Byte Count, and Read Status fields used when reading the content of a stored data frame from the linked list for transfer to the main memory.

In view of the above, Naven's control information and received data items do not teach or suggest: "receiving a first control packet in a first node of said plurality of nodes, said first node comprising a plurality of control packet buffers, each of said plurality of control packet buffers assigned to a different one of a plurality of virtual channels; determining a first virtual channel of said plurality of virtual channels to which said first control packet belongs; storing said first control packet in a first control packet buffer of said plurality of control packet buffers, said first control packet buffer assigned to said first virtual channel" as recited in claim 1.

Furthermore, nothing in Naven teaches or suggests:

receiving a first control packet in a first node of said plurality of nodes,

said first node comprising a plurality of control packet buffers, each of said plurality of control packet buffers assigned to a different one of a plurality of virtual channels;
determining a first virtual channel of said plurality of virtual channels to which said first control packet belongs;
storing said first control packet in a first control packet buffer of said plurality of control packet buffers, said first control packet buffer assigned to said first virtual channel;
receiving a first data packet specified by said first control packet; and
storing said first data packet in a first data buffer of a plurality of data buffers within said first node, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet

as recited in claim 1.

For at least all of the above stated reasons, Applicants submit that claim 1 is patentable over Naven. Claims 3-8 and 20, being dependent from claim 1, are similarly patentable over Naven for at least the above stated reasons as well. Each of claims 3-8 and 20 recite additional combinations of features which are not taught or suggested in Naven.

Claim 9 recites a combination of features including:

a first node configured to transmit a first control packet; and
a second node coupled to receive said first control packet from said first node, wherein said second node comprises a plurality of control packet buffers, and wherein each of said plurality of control packet buffers is assigned to a different one of a plurality of virtual channels, and wherein said second node is configured to store said first control packet in a first control packet buffer of said plurality of control packet buffers responsive to a first virtual channel of said plurality of virtual channels to which said first control packet belongs, and wherein said second node further comprises a plurality of data buffers, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet, and wherein said first node is configured to transmit a first data packet specified by said first control packet, and wherein said second node is configured to store

said first data packet in a first data buffer of said plurality of data buffers, said first data buffer assigned to said first virtual channel.

Naven's teachings, as highlighted above, do not teach or suggest the above combination of features. Therefore, Applicants submit that claim 9 is patentable over Naven for at least these reasons. Claims 12-19 and 21, being dependent from claim 9, are similarly patentable over Naven for at least the above reasons as well. Each of claims 12-19 and 21 recite additional combinations of features which are not taught or suggested in Naven.

New Claims

New claims 22-29 each recite combinations of features not taught or suggested in Naven. For example, claim 22 recites a combination of features including:

a plurality of control packet buffers, wherein each of said plurality of control packet buffers is assigned to a different one of a plurality of virtual channels;
a plurality of data buffers, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet; and
circuitry configured to store said first control packet in a first control packet buffer of said plurality of control packet buffers responsive to a first virtual channel of said plurality of virtual channels to which said first control packet belongs, and further configured to store said first data packet in a first data buffer of said plurality of data buffers, said first data buffer assigned to said first virtual channel.

These features are not taught or suggested in Naven.

Comment on Formal Drawing Requirement

The present Office Action states (page 2, paragraph 2) that formal drawings will be required when the application is allowed. Applicants note that formal drawings were filed on May 23, 2000.

CONCLUSION

Applicants submit that the application is in condition for allowance, and an early notice to that effect is requested. If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Conley, Rose, & Tayon, P.C. Deposit Account No. 501505/5500-46300/LJM.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Request for Approval of Drawing Changes

☐ Notice of Change of Address

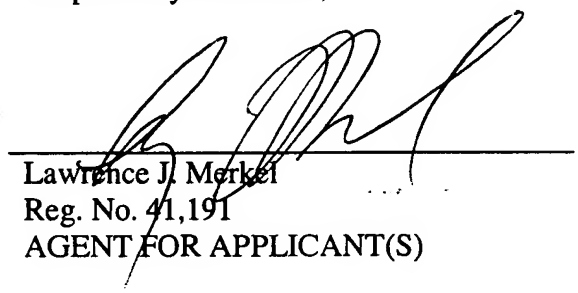
☒ Marked-up Copy of Amended Claims

☐ Marked-up Copy of Amended Paragraphs

☒ Fee Authorization Form authorizing a deposit account debit in the amount of $108 for fees ($108 for 6 excess claims over 20).

☐ Other:

Respectfully submitted,



Lawrence J. Merkel
Reg. No. 41,191
AGENT FOR APPLICANT(S)

Conley, Rose & Tayon, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 476-1400

Date: 6/15/02

Marked-up Copies of Amended Claims:

1. (Amended) A method for routing packets among a plurality of nodes in a computer system, the method comprising:

receiving a first control packet in a first node of said plurality of nodes, said first node comprising a plurality of control packet buffers, each of said plurality of control packet buffers assigned to a different one of a plurality of virtual channels;

determining a first virtual channel of said plurality of virtual channels to which said first control packet belongs; [and]

storing said first control packet in a first control packet buffer of said plurality of control packet buffers, said first control packet buffer assigned to said first virtual channel;

receiving a first data packet specified by said first control packet; and

storing said first data packet in a first data buffer of a plurality of data buffers within said first node, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet.

9. (Amended) A computer system comprising:

a first node configured to transmit a first control packet; and

a second node coupled to receive said first control packet from said first node, wherein said second node comprises a plurality of control packet buffers, and wherein each of said plurality of control packet buffers is assigned to

a different one of a plurality of virtual channels, and wherein said second node is configured to store said first control packet in a first control packet buffer of said plurality of control packet buffers responsive to a first virtual channel of said plurality of virtual channels to which said first control packet belongs, and wherein said second node further comprises a plurality of data buffers, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet, and wherein said first node is configured to transmit a first data packet specified by said first control packet, and wherein said second node is configured to store said first data packet in a first data buffer of said plurality of data buffers, said first data buffer assigned to said first virtual channel.

14. (Amended) The computer system as recited in claim [11] 9 wherein, if said second node is a destination of said first control packet, said second node is configured to remove said first control packet from said first control packet buffer and to respond to said first control packet.

17. (Amended) The computer system as recited in claim [11] 9 further comprising a third node coupled to receive packets from said second node, wherein, if said second node is not a destination of said first control packet, said second node is configured to remove said first control packet from said first control packet buffer and to forward said first control packet to said third node.